



NASA STTR 2006 Phase I Solicitation

T7.02 Remote Sensors for Entry, Descent and Landing Applications

Lead Center: LaRC

Center: LaRC

The NASA Langley Research Center, located in Hampton VA, maintains core competencies in laser/lidar technology development and entry/landing/descent (EDL) applications. Innovative or improved concepts are solicited for the development of sensors supporting human and robotic exploration missions to planetary surfaces. Of immediate interest are technologies enhancing or enabling sensors used in precision guidance and navigation related to surface landings and hazard avoidance. The sensors would be employed from orbit, through descent, and during final approach. The deployed system may require multiple sensors of different fundamental types. Specific sensors/components currently of interest include those associated with:

- 3D lidar systems, including flash lidars and scanning lidars;
- High resolution radars;
- 2D optical imaging devices.

Examples of components desired would include:

- New, highly accurate and robust wide angle scanning systems;
- Moderate power high efficiency lasers;
- Fast detector arrays suitable for use in coherent lidar systems;
- High efficiency long range flash lamps.

Proposals should describe the expected improvements and advantages of proposed deliverables over existing

technologies, and should estimate the effects of these improvements on the state-of-the-art EDL guidance, control and hazard avoidance capabilities. Technologies likely to be ready for flight demonstration within the next 2 or 3 years are preferred, but highly innovative longer-term concepts will also be considered.